

1 IN THE CLAIMS:

2 Please amend the claims as follows:

3 1. (Currently Amended)

4 In a harvester for vine crops, such as tomatoes, wherein the vines are severed near  
5 ground level and removed from the ground with severing means, where the harvester has a  
6 wheel-mounted frame having a forward end, a rear end, a right side, a left side and a  
7 center, means for moving said harvester forwardly in a field, pickup means adjacent said  
8 forward end for picking up crops and attached vines from the field and carrying the crops  
9 and vines rearwardly and upwardly, and separating means for separating crops from the  
10 vines, an improvement in the pickup means comprising:

11 a plurality of ground-engaging conveyors comprising a central conveyor and an  
12 outrigger conveyor, the central conveyor and outrigger conveyor extending from  
13 the forward end of the harvester, each conveyor having a bottom end and a top end,  
14 a cutter attached at the bottom end, the outrigger conveyor pivotally attached to the  
15 central conveyor such that the outrigger conveyor may be pivoted from a first  
16 position with the outrigger conveyor in the same relative position as the central  
17 conveyor, to a second position with the outrigger conveyor at approximately a right  
18 angle to the central conveyor and

19 a lower cross-conveyor transversely mounted at the top end of the outrigger  
20 conveyor, the lower cross-conveyor adapted to receive crops and attached vines  
21 transported upwardly from the outrigger conveyor, the lower cross-conveyor  
22 moving said crops and attached vines from a side of the frame toward the center of  
23 the frame.

24 2. (Previously Amended)

25 The pickup means of claim 1 wherein the central conveyor and outrigger conveyor  
26 each comprise a drive shaft at the top end and a plurality of rods connected by a belt at  
27 each end of the rods.

1 3. (Original)

2 The pickup means of claim 2 further comprising a hydraulic motor coupled to the drive  
3 shaft.

4 4. (Withdrawn)

5 5. (Currently Amended)

6 The pickup means of claim 4 1 further comprising an intermediate endless loop conveyor  
7 such that the long axis of the intermediate conveyor is approximately parallel to the center  
8 of the harvester, the intermediate conveyor receiving crops and attached vines from the  
9 cross-conveyor and transporting the crops and attached vines upwardly to the separating  
10 means.

11 6. (Currently Amended)

12 In a harvester for vine crops, such as tomatoes, wherein the vines are severed near ground  
13 level and removed from the ground with severing means, where the harvester has a wheel-  
14 mounted frame having a forward end, a rear end, a right side, a left side and a center,  
15 means for moving said harvester forwardly in a field, pickup means adjacent said forward  
16 end for picking up crops and attached vines from the field and carrying the crops and vines  
17 rearwardly and upwardly, and separating means for separating crops from the vines, an  
18 improvement in the pickup means comprising:

19 a plurality of ground-engaging conveyors comprising a central conveyor, a right-  
20 side outrigger conveyor, and a left-side outrigger conveyor, the central conveyor,  
21 right-side outrigger conveyor and left-side outrigger conveyor extending from the  
22 forward end of the harvester, each conveyor having a bottom end and a top end, a  
23 cutter attached at the bottom end, the right-side outrigger conveyor pivotally  
24 attached to the central conveyor such that the right-side outrigger conveyor may be  
25 pivoted from a first position with the right-side outrigger conveyor in the same  
26 relative position as the central conveyor, to a second position with the right-side  
27 outrigger conveyor at approximately a right angle to the central conveyor, and the

1 left-side outrigger conveyor pivotally attached to the central conveyor such that the  
2 left-side outrigger conveyor may be pivoted from a first position with the left-side  
3 outrigger conveyor in the same relative position as the central conveyor, to a  
4 second position with the left-side outrigger conveyor at approximately a right angle  
5 to the central conveyor and a lower left cross-conveyor transversely mounted at the  
6 top end of the left-side outrigger conveyor, the lower left cross-conveyor adapted to  
7 receive crops and attached vines transported upwardly from the left-side outrigger  
8 conveyor, the lower left cross-conveyor moving said crops and attached vines from  
9 the left side of the frame toward the center of the frame.

10 7. (Previously Amended)

11 The pickup means of claim 6 wherein the central conveyor, the right-side outrigger  
12 conveyor and the left-side outrigger conveyor each comprise a drive shaft at the top end  
13 and a plurality of rods connected by a belt at each end of the rods.

14 8. (Original)

15 The pickup means of claim 7 further comprising a hydraulic motor coupled to the drive  
16 shaft.

17 9. (Withdrawn)

18 10. (Original)

19 The pickup means of claim 6 further comprising a lower right cross-conveyor transversely  
20 mounted at the top end of the right-side outrigger conveyor, the lower right cross-conveyor  
21 adapted to receive crops and attached vines transported upwardly from the right-side  
22 outrigger conveyor, the lower right cross-conveyor moving said crops and attached vines  
23 from the right side of the frame toward the center of the frame.

24 11. (Currently Amended)

25 The pickup means of claim 9 6 further comprising an intermediate endless loop conveyor  
26 such that the long axis of the intermediate conveyor is approximately parallel to the center  
27 of the harvester, the intermediate conveyor receiving crops and attached vines from the

1 lower left cross-conveyor and transporting the crops and attached vines upwardly to the  
2 separating means.

3 12. (Original)

4 The pickup means of claim 10 further comprising an intermediate endless loop conveyor  
5 such that the long axis of the intermediate conveyor is approximately parallel to the center of the  
6 harvester, the intermediate conveyor receiving crops and attached vines from the lower right  
7 cross-conveyor and transporting the crops and attached vines upwardly to the separating means.

8 13. (Previously Amended)

9 In a harvester for vine crops, such as tomatoes, wherein the vines are severed near ground  
10 level and removed from the ground with severing means, where the harvester has a wheel-  
11 mounted frame having a forward end, a rear end, a right side, a left side and a center,  
12 means for moving said harvester forwardly in a field, pickup means adjacent said forward  
13 end for picking up crops and attached vines from the field and carrying the crops and vines  
14 rearwardly and upwardly, and separating means for separating crops from the vines, an  
15 improved separating means comprising:

16 (a) a drum housing;

17 (b) a drum assembly disposed within the drum housing, the drum assembly  
18 comprising: (i) a drum having a first end and a second end, the first and  
19 second end defining a longitudinal axis oriented transverse to the travel  
20 direction of the harvester, and a multiplicity of tines extending radially  
21 from the outer peripheral surface of the drum; (ii) a first shaft extending  
22 through the drum; (iii) a first weight housing adjacent and coupled to the  
23 first end, the first shaft extending through the first weight housing; (iv) a  
24 second weight housing adjacent and coupled to the second end; (v) a first  
25 hydraulic motor coupled to the first shaft; and (vi) a second hydraulic motor  
26 for rotating the drum connected to the second weight housing with a spring  
27 coupling, the spring coupling comprising a plurality of springs disposed

between two end plates, the end plates on either side of a center plate which supports the first shaft; and

(c) a plurality of stationary rods mounted adjacent to the tines of the drum such that the tines pass through the stationary rods as the drum rotates.

14. (Original)

The improved separating means of claim 13, wherein the first weight housing and the second weight housing each comprise: (i) a plurality of weight shafts secured within each weight housing; (ii) a plurality of eccentrically mounted weights mounted on the weight shafts; (iii) transmission means connecting the first shaft to the weight shafts in the weight housings for rotating the eccentrically mounted weights mounted therein.

15. (Original)

The improved separating means of claim 14 wherein the transmission means comprise a first sheave mounted on the first shaft coupled to the weight shafts of the first weight housing with belts and a second sheave mounted on the first shaft coupled to the weight shafts of the second weight housing with belts.

16. (Original)

The improved separating means of claim 14, wherein the total weight of the eccentrically mounted weights is in excess of 450 pounds.

17. (Original)

The improved separating means of claim 13, wherein the angular velocity of the drum does not exceed 200 revolutions per minute.

18. (Previously Amended)

In a harvester for vine crops, such as tomatoes, wherein the vines are severed near ground level and removed from the ground with severing means, where the harvester has a wheel-mounted frame having a forward end, a rear end, a right side, a left side and a center, means for moving said harvester forwardly in a field, and pickup means adjacent said forward end for picking up crops and attached vines from the field and carrying the crops

1 and vines rearwardly and upwardly, and separating means for separating crops from the  
2 vines, improvements to the harvester comprising:

3 (a) the pickup means comprising: a plurality of ground-engaging conveyors  
4 comprising a central conveyor and an outrigger conveyor, the central conveyor and  
5 outrigger conveyor extending from the forward end of the harvester, each conveyor  
6 having a bottom end and a top end, a cutter attached at the bottom end;

7 (b) the separating means comprising:

8 (i) a drum housing;

9 (ii) a drum assembly disposed within the drum housing, the drum assembly  
10 comprising: (1) a drum having a first end and a second end, the first and  
11 second end defining a longitudinal axis oriented transverse to the travel  
12 direction of the harvester, and a multiplicity of tines extending radially  
13 from the outer peripheral surface of the drum; (2) a first shaft extending  
14 through the drum; (3) a first weight housing adjacent and coupled to the  
15 first end, the first shaft extending through the first weight housing; (4) a  
16 second weight housing adjacent and coupled to the second end; (5) a first  
17 hydraulic motor coupled to the first shaft; and (6) a second hydraulic motor  
18 for rotating the drum connected to the second weight housing with a spring  
19 coupling, the spring coupling comprising a plurality of springs disposed  
20 between two end plates the end plates on either side of a center plate which  
21 supports the first shaft; and

22 (iii) a plurality of stationary rods mounted adjacent to the tines of the drum such  
23 that the tines pass through the stationary rods as the drum rotates.

24 19. (Original)

25 The harvester of claim 18 wherein the wherein the first weight housing and the second  
26 weight housing each comprise: (i) a plurality of weight shafts secured within each weight  
27 housing; (ii) a plurality of eccentrically mounted weights mounted on the weight shafts;

1 (iii) transmission means connecting the first shaft to the weight shafts in the weight  
2 housings for rotating the eccentrically mounted weights mounted therein.

3 20. (Original)

4 The harvester of claim 19 wherein the transmission means comprise a first sheave  
5 mounted on the first shaft coupled to the weight shafts of the first weight housing with  
6 belts and a second sheave mounted on the first shaft coupled to the weight shafts of the  
7 second weight housing with belts.

8 21. (Original)

9 The harvester of claim 19, wherein the total weight of the eccentrically mounted weights is  
10 in excess of 450 pounds.

11 22. (Original)

12 The harvester of claim 19, wherein the angular velocity of the drum does not exceed 200  
13 revolutions per minute.

14 23. (Previously Amended)

15 In a harvester for vine crops, such as tomatoes, wherein the vines are severed near ground  
16 level and removed from the ground with severing means, where the harvester has a wheel-  
17 mounted frame having a forward end, a rear end, a right side, a left side and a center,  
18 means for moving said harvester forwardly in a field, and pickup means adjacent said  
19 forward end for picking up crops and attached vines from the field and carrying the crops  
20 and vines rearwardly and upwardly, and separating means for separating crops from the  
21 vines, improvements to the harvester comprising:

22 (a) the pickup means comprising: a plurality of ground-engaging conveyors  
23 comprising a central conveyor and an outrigger conveyor, the central conveyor and  
24 outrigger conveyor extending from the forward end of the harvester, each conveyor  
25 having a bottom end and a top end, a cutter attached at the bottom end, the  
26 outrigger conveyor pivotally attached to the central conveyor such that the  
27 outrigger conveyor may be pivoted from a first position with the outrigger

conveyor in the same relative position as the central conveyor, to a second position with the outrigger conveyor at approximately a right angle to the central conveyor;

(b) the separating means comprising:

(i) a drum housing;

(ii) a drum assembly disposed within the drum housing, the drum assembly comprising: (1) a drum having a first end and a second end, the first and second end defining a longitudinal axis oriented transverse to the travel direction of the harvester, and a multiplicity of tines extending radially from the outer peripheral surface of the drum; (2) a first shaft extending through the drum; (3) a first weight housing adjacent and coupled to the first end, the first shaft extending through the first weight housing; (4) a second weight housing adjacent and coupled to the second end; (5) a first hydraulic motor coupled to the first shaft; and (6) a second hydraulic motor for rotating the drum connected to the second weight housing with a spring coupling, the spring coupling comprising a plurality of springs disposed between two end plates the end plates on either side of a center plate which supports the first shaft; and

(iii) a plurality of stationary rods mounted adjacent to the tines of the drum such that the tines pass through the stationary rods as the drum rotates.

24. (Original)

The harvester of claim 23 wherein the wherein the first weight housing and the second weight housing each comprise: (i) a plurality of weight shafts secured within each weight housing; (ii) a plurality of eccentrically mounted weights mounted on the weight shafts; (iii) transmission means connecting the first shaft to the weight shafts in the weight housings for rotating the eccentrically mounted weights mounted therein.

25. (Original)

The harvester of claim 24 wherein the transmission means comprise a first sheave



1 mounted on the first shaft coupled to the weight shafts of the first weight housing with  
2 belts and a second sheave mounted on the first shaft coupled to the weight shafts of the  
3 second weight housing with belts.

4 26. (Original)

5 The harvester of claim 24, wherein the total weight of the eccentrically mounted weights is  
6 in excess of 450 pounds.

7 27. (Original)

8 The harvester of claim 24, wherein the angular velocity of the drum does not exceed 200  
9 revolutions per minute.

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